

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/US2004/031224

|                                     |           |          |           |
|-------------------------------------|-----------|----------|-----------|
| A. CLASSIFICATION OF SUBJECT MATTER |           |          |           |
| IPC 7                               | C12P21/02 | C12N9/06 | C12N15/53 |

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 C12N C12P

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EP0-Internal, Sequence Search, WPI Data, PAJ, EMBASE, BIOSIS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category | Citation of document, with indication, where appropriate, of the relevant passages  | Relevant to claim No. |
|----------|---|-----------------------|
| A        | BOGOSIAN G ET AL: "Biosynthesis and incorporation into protein of norleucine by Escherichia coli." THE JOURNAL OF BIOLOGICAL CHEMISTRY. 5 JAN 1989, vol. 264, no. 1, 5 January 1989 (1989-01-05), pages 531-539, XP002324310 ISSN: 0021-9258 cited in the application the whole document<br>----- | 1-18,<br>27-42        |
| A        | US 5 698 418 A (BRUNNER ET AL)<br>16 December 1997 (1997-12-16)<br>cited in the application abstract<br>-----<br>-/-  | 1-18,<br>27-42        |

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

\* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority, claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

|  |  |
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| Date of the actual completion of the international search  | Date of mailing of the international search report |
| 15 April 2005  | 11-07-2005   |
| Name and mailing address of the ISA<br>European Patent Office, P.B. 5818 Patentlaan 2<br>NL - 2280 HV Rijswijk<br>Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,<br>Fax: (+31-70) 340-3016 | Authorized officer<br><br>Wiame, I                 |

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# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US2004/031224

| C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT |  |                                      |
|--|--|--------------------------------------|
| Category   | Citation of document, with indication, where appropriate, of the relevant passages   | Relevant to claim No.                |
| A  | JAKUBOWSKI H ET AL: "Editing of errors in selection of amino acids for protein synthesis."<br>MICROBIOLOGICAL REVIEWS. SEP 1992, vol. 56, no. 3, September 1992 (1992-09), pages 412-429, XP002324311<br>ISSN: 0146-0749<br>page 425, column 1, last paragraph<br>page 420, column 2, last paragraph - page 421, column 2, last paragraph<br>----- | 1-18,<br>27-42                       |
| A  | KATAOKA KUNISHIGE ET AL: "Alteration of substrate specificity of leucine dehydrogenase by site-directed mutagenesis."<br>JOURNAL OF MOLECULAR CATALYSIS B ENZYMATIC, vol. 23, no. 2-6, 1 September 2003 (2003-09-01), pages 299-309, XP002324312<br>ISSN: 1381-1177<br>the whole document<br>-----   | 1-7,<br>16-18,<br>27-34,<br>36,38-40 |
| A  | US 5 789 234 A (BERTELSEN ET AL)<br>4 August 1998 (1998-08-04)<br><br>the whole document<br>-----  | 3-7,<br>16-18,<br>30,32,<br>33,37-40 |

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## INTERNATIONAL SEARCH REPORT

International application No.  
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### Box II Observations where certain claims were found unsearchable (Continuation of Item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claims Nos.: because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
  
3.  Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

### Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple Inventions in this International application, as follows:

see additional sheet

1.  As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
  
2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
  
3.  As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
  
4.  No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-18, 27-42 (all completely)

Remark on Protest

- The additional search fees were accompanied by the applicant's protest.  
 No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-18, 27-42 (all completely)

use of non-standard amino acid degrading protein in a method for reducing the incorporation of non-standard amino acids into a heterologous protein expressed by a microorganism and in methods of isolating a heterologous protein

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2. claims: 19-26 (all completely)

E. coli glutamate dehydrogenase protein comprising a L92K variation, DNA molecule encoding said protein and E. coli cell comprising said DNA molecule or expressing said protein

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US2004/031224

| Patent document cited in search report | Publication date |            | Patent family member(s)   |  | Publication date   |
|--|------------------|------------|---|--|--|
| US 5698418                             | A                | 16-12-1997 | US 5622845 A<br>AT 152176 T<br>AU 3058489 A<br>DE 68927997 D1<br>DE 68927997 T2<br>DK 181790 A<br>EP 0401254 A1<br>EP 0737752 A2<br>JP 2879063 B2<br>JP 3502758 T<br>WO 8907651 A2  |  | 22-04-1997<br>15-05-1997<br>06-09-1989<br>28-05-1997<br>11-09-1997<br>30-07-1990<br>12-12-1990<br>16-10-1996<br>05-04-1999<br>27-06-1991<br>24-08-1989   |
| US 5789234                             | A                | 04-08-1998 | US 6319685 B1<br>AT 283922 T<br>CA 2009306 A1<br>DE 69034179 D1<br>DK 382403 T3<br>EP 0382403 A2<br>FI 110517 B1<br>HU 54414 A2<br>JP 2072995 C<br>JP 5041982 A<br>JP 7071498 B<br>KR 157983 B1<br>LT 1829 A ,B<br>NO 900531 A<br>RU 2129606 C1<br>AT 198355 T<br>AU 629795 B2<br>AU 2057688 A<br>CA 1341454 C<br>DE 3856446 D1<br>DE 3856446 T2<br>DK 448988 A<br>EP 0308067 A2<br>EP 0529742 A1<br>FI 883722 A<br>FI 935385 A<br>HU 213227 B1<br>HU 212071 B3<br>HU 9500552 A3<br>JP 2104281 A<br>JP 2979172 B2<br>KR 136611 B1<br>LT 1656 A ,B<br>NO 883592 A<br>RU 2080385 C1 |  | 20-11-2001<br>15-12-2004<br>06-08-1990<br>05-01-2005<br>21-03-2005<br>16-08-1990<br>14-02-2003<br>28-02-1991<br>25-07-1996<br>23-02-1993<br>02-08-1995<br>16-11-1998<br>25-08-1995<br>07-08-1990<br>27-04-1999<br>15-01-2001<br>15-10-1992<br>16-02-1989<br>20-04-2004<br>01-02-2001<br>12-07-2001<br>15-02-1989<br>22-03-1989<br>03-03-1993<br>15-02-1989<br>01-12-1993<br>28-07-1997<br>28-02-1996<br>30-10-1995<br>17-04-1990<br>15-11-1999<br>25-04-1998<br>25-07-1995<br>15-02-1989<br>27-05-1997 |

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